CLAIM AMENDMENTS

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Currently Amended)** A wideband multi-mode antenna, comprising:

an antenna element made from a single right triangularly shaped sheet of conductive material, the material having a height and a base dimension;

wherein the conductive material has a rolled shape, such that the antenna has the height of the conductive material, a number of turns having spacing between them, **and** a base diameter~~, and a pointed tip~~.

2. The antenna of Claim 1, wherein the spacing between the turns is uniform.

3. The antenna of Claim 1, further comprising a dielectric material between the turns.

4. The antenna of Claim 1, wherein the ratio of the height to the diameter is less than 15:1.

5. The antenna of Claim 1, wherein the ratio of the height to the diameter is greater than 5:1.

6. The antenna of Claim 1, wherein the number of turns is less than four .

7. The antenna of Claim 1, wherein the conductive material is a mesh material.

8. The antenna of Claim 1, wherein the conductive material has a curved hypotenuse.

9. The antenna of Claim 1, further comprising a radome enclosing the antenna element.

10. The antenna of Claim 1, wherein the height is approximately in the range of 0.2 to 0.24 of the wavelength of a low frequency of operation.

11. The antenna of Claim 1, wherein the diameter is approximately 0.02 of the wavelength of a low frequency of operation.

12. The antenna of Claim 1, further comprising a ground plane upon which the antenna element is mounted.

13. The antenna of Claim 12, wherein the spacing between the ground plane and the base of the antenna element results in a ratio of approximately 50:1, representing the ratio of total height of the antenna above the ground plane to the spacing.

14. The antenna of Claim 1, wherein the height is approximately 0.86 times c divided by 4f, where f is a desired low frequency of operation.

15. The antenna of Claim 1, wherein the base is approximately the height divided by K, where K is a constant ranging from 1.3 to 1.7.

16. The antenna of Claim 1, wherein the thickness of the conductive material is less than 0.002 of the height.

17. The antenna of Claim 1, further comprising a feed point at the innermost point of the base.

18. **(Currently Amended)** A diopole type antenna, comprising:

two antenna elements, each made from a single right triangularly shaped sheet of conductive material, having a height and a base dimension;

wherein the conductive material has a rolled shape, such that the antenna has the height of the conductive material, a number of turns having spacing between them, **and** a base diameter~~, and a pointed tip~~;

wherein the antenna elements are connected to form a dipole.

19. The antenna of Claim 18, wherein the antenna elements form mirror images.

20. The antenna of Claim 18, wherein the antenna elements form reverse images.

21. **(Currently Amended)** A method of manufacturing an antenna, comprising the steps of:

forming a right-triangularly shaped sheet of conductive material, having a height and a base dimension; and

rolling the material along the height dimension, to form the antenna such that the antenna has the height of the conductive material, a number of turns having spacing between them, **and** a base diameter~~, and a pointed tip~~.

22. The method of Claim 21, wherein the rolling step is performed such that the spacing between turns is uniform.

23. The method of Claim 21, wherein the rolling step is performed such that the ratio of the height to the diameter is less than 15:1.

24. The method of Claim 21, wherein the rolling step is performed such that the ratio of the height to the diameter is greater than 5:1.

25. The method of Claim 21, wherein the height is approximately 0.86 times c divided by 4f, where f is a desired low frequency of operation.

26. The method of Claim 21, wherein the base is approximately the height divided by K, where K is a constant ranging from 1.3 to 1.7.

27. The method of Claim 21, wherein the thickness of the conductive material is less than 0.002 of the height.

28. The method of Claim 21, wherein the forming step and the rolling step are performed to provide a height to diameter ratio that results in a desired VSWR.

29. The method of Claim 21, further comprising the step of affixing an antenna feed point to the base of the antenna.

30. The method of Claim 29, wherein the feed point is at the innermost point of the base.

31. The method of Claim 29, wherein the feed point is placed at a location that produces a desired VSWR.

32. The method of Claim 21, further comprising the step of adjusting the spacing between turns to provide a desired bandwidth.

33. The method of Claim 21, further comprising the step of placing a dielectric material between the turns.

34. **(New)** A wideband multi-mode antenna, comprising:

a substantially triangular sheet of conductive material, rolled such that the material has one or more turns;

wherein the antenna has a height along the axis of the turns and a diameter determined by the outside surface of the turns; and

wherein the turns have spacing between them.

35. **(New)** The antenna of Claim 34, wherein the ratio of the height to the diameter is designed to provide a desired bandwidth.

36. **(New)** The antenna of Claim 34, wherein the height is designed to provide a desired operating frequency of the antenna.

37. **(New)** The antenna of Claim 34, wherein the diameter is designed to provide a desired operating frequency of the antenna.

38. **(New)** The antenna of Claim 34, wherein the height and diameter are designed to provide multiple operation modes of the antenna.

39. **(New)** The antenna of Claim 34, further comprising a ground plane, and further comprising a spacer between the antenna and the ground plane.

40. **(New)** The antenna of Claim 39, wherein the height of the spacer is designed to provide a desired bandwidth.

41. **(New)** The antenna of Claim 39, wherein the height of the spacer is designed to provide a desired operating frequency of the antenna.

42. **(New)** The antenna of Claim 39, wherein the height of the spacer is designed to provide multiple operation modes of the antenna.

43. **(New)** The antenna of Claim 34, wherein the spacing between the turns is designed to provide a desired bandwidth.

44. **(New)** The antenna of Claim 34, wherein the spacing between the turns is designed to provide a desired operating frequency of the antenna.

45. **(New)** The antenna of Claim 34, wherein the spacing between the turns is designed to provide multiple operation modes of the antenna.

46. **(New)** The antenna of Claim 34, wherein the feed point of the antenna is designed to provide a desired bandwidth.

47. **(New)** The antenna of Claim 34, wherein the feed point of the antenna is designed to provide a desired VSWR.

48. **(New)** The antenna of Claim 34, wherein the one or more turns have a linear upper surface.

49. **(New)** The antenna of Claim 34, wherein the one or more turns have an concave upper surface.

50. **(New)** The antenna of Claim 34, wherein the one or more turns have a convex upper surface.

51. **(New)** A method of manufacturing an antenna, comprising the steps of:

rolling a sheet of generally triangular material, thereby forming a rolled shape having a height along the axis of the rolled shape, a diameter around the outer surface of the rolled shape, and one or more turns having spacing between them.

52. **(New)** The method of Claim 51, further comprising the step of adjusting the height of the planar material to provide a desired bandwidth.

53. **(New)** The method of Claim 51, further comprising the step of adjusting the height of the planar material to provide a desired operating frequency of the antenna.

54. **(New)** The method of Claim 51, further comprising the step of adjusting the height of the planer material to provide a combination of operating modes of the antenna.

55. **(New)** The method of Claim 51, further comprising the step of adjusting the diameter of the planar material to provide a desired bandwidth.

56. **(New)** The method of Claim 51, further comprising the step of adjusting the diameter of the planar material to provide a desired operating frequency of the antenna.

57. **(New)** The method of Claim 51, further comprising the step of adjusting the diameter of the planar material to provide a desired combination of operating modes of the antenna.

58. **(New)** The method of Claim 51, further comprising the step of placing the antenna above a ground plane, and of adjusting the spacing of the antenna above the ground plane to provide a desired bandwidth.

59. **(New)** The method of Claim 51, further comprising the step of placing the antenna above a ground plane, and of adjusting the spacing of the antenna above the ground plane to provide a desired operating frequency of the antenna.

60. **(New)** The method of Claim 51, further comprising the step of placing the antenna above a ground plane, and of adjusting the spacing of the antenna above the ground plane to provide a desired combination of operating modes of the antenna.

61. **(New)** The method of Claim 51, further comprising the step of adjusting the spacing between turns to provide a desired bandwidth.

62. **(New)** The method of Claim 51, further comprising the step of adjusting the spacing between turns to provide a desired operating frequency of the antenna.

63. **(New)** The method of Claim 51, further comprising the step of adjusting the spacing between turns to provide a desired combination of operating modes of the antenna.

64. **(New)** The method of Claim 51, further comprising the step of adjusting the feedpoint of the antenna to provide a desired bandwidth.